

4.2%), the mean length of stay (11.7, 13.4, and 12.6 days), or the incidence of postoperative myocardial infarction (4.5%, 3.4%, and 4.2%)," concludes the study. "The total cost of coronary artery bypass grafting per patient did not differ significantly between the three groups."

David Spurgeon *Quebec*

Smoking may mimic effect of antidepressants

Cigarette smoking may have effects on the human brain similar to those of antidepressant drugs, and this may explain the high rate of smoking among depressed people and their resistance to quitting.

Researchers have noted that depressed people are more likely to smoke and are more resistant to quitting. However, it has been unclear if nicotine or other chemicals taken in during smoking directly affected the brains of people who were depressed.

In a new study Dr Gregory Ordway, professor of psychiatry at the University of Mississippi Medical Center, and colleagues examined postmortem samples of locus caeruleus from the brains of seven people who had been heavy smokers and nine who had been non-smokers; all had been mentally healthy. They found that the brains of long term smokers had neurochemical abnormalities similar to the brains of animals treated with antidepressant drugs (*Archives of General Psychiatry* 2001;58:821-7).

Scott Gottlieb *New York*

UK survey finds variation in oestrogen receptor testing

Differences in the methods used for oestrogen receptor testing in women with breast cancer may mean that some miss out on optimal treatment, a survey of breast cancer units in the United Kingdom reported last week.

The postal survey of 229 breast cancer units showed that only a third of centres were test-

ing oestrogen receptor status by what breast cancer specialists consider to be the most accurate method.

Reporting the findings at the seventh Nottingham international breast meeting, Mr Gordon Wishart, consultant breast surgeon at the breast unit of Addenbrooke's Hospital, Cambridge, said: "Accurate knowledge of oestrogen receptor status is important in determining treatment. Differences in measuring oestrogen receptor status may lead to differences in treatments, which may lead to differences in outcomes."

At some centres only 5% of tumours were positive on oestrogen receptor testing, while as many as 80% tested positive at others. Full results from the survey, which was sponsored by an educational grant from AstraZeneca, will be published in the *European Journal of Cancer*.

Susan Mayor *London*

Japan to test a million cattle after discovery of first case of BSE

The Japanese government has announced that it will test one million cattle for bovine spongiform encephalopathy (BSE) after the discovery of Asia's first case of mad cow disease. The cows will be tested after they have been slaughtered for meat.

The mass testing, along with a ban on meat and bone feed and the start of new research into Creutzfeldt-Jakob disease, is designed to allay consumers' concerns, which have been heightened by a blundered official response to the discovery.

Brain tissue from a 5 year old Holstein dairy cow from a farm in Chiba, just outside Tokyo, tested positive for the disease in late August. The government says it will not confirm that the cow was infected until a further examination is carried out in Britain, but several nations, including the United States, South Korea, Malaysia, and Taiwan, have already banned Japanese beef.

Joe Lamar *Tokyo*

Surgeons perform transatlantic operation using fibreoptics

Scott Gottlieb *New York*

Surgeons working in New York have successfully used remotely controlled robots to laparoscopically remove a gall bladder from a 68 year old woman in Strasbourg, France. This is the world's first transoceanic operation on humans that has been conducted over high speed fibreoptic connections (*Nature* 2001;413:379-80).

Although robotic surgery is now commonplace in at least 100 hospitals around the world, the successful operation proves the feasibility of using robots to perform operations remotely over long distances.

The researchers used the ZEUS robotic surgical system (Computer Motion, Santa Barbara, CA) and a fibreoptic communication system owned by France Telecom. The operation lasted less than an hour and involved data transfer over a 14 000 km circuit. The nearly instantaneous time taken for the transfer and video coding of data meant the surgeons' movements appeared on their screens with a delay of around 155 milliseconds, well inside the estimated safe lag time of 330 milliseconds.

Before attempting a human operation, the surgeons involved, Dr Michel Gagner and colleagues from Mount Sinai Medical Center in New York, and Dr Jacques Marescaux and colleagues from Louis Pasteur University in Strasbourg, tested

the feasibility of transatlantic cholecystectomy on pigs. Dr Marescaux's team was in charge of preparing the patients and connecting the robotic arms, and Dr Gagner's group manipulated the controls that actually moved the arms.

The mean operating time for the six porcine cholecystectomies was 45 minutes. The human operation, performed under the same protocol, required 16 minutes to set up the robotic system and 54 minutes to actually perform the gallbladder dissection. No intraoperative complications occurred and the patient was discharged 48 hours later after an uneventful hospital stay.

The robotic systems that the doctors used have several potential advantages over conventional surgery. Firstly, a computer program filters out the hand tremors that a surgeon can develop during a long operation. Another program scales down the surgeon's motions, so that a 2 cm motion of his hand becomes a 2 mm movement inside the patient's body. The television camera gives a 25-fold enlargement of the view, compared with the twofold or threefold increase provided by surgeons' glasses.

Dr Gagner said that it was difficult to predict the future of telesurgery. "For now, I think the biggest application will be in surgical education," he added. □



French surgeon Jacques Marescaux controls robotic arms as surgeons in New York remove the gall bladder of a woman in France